CLAIMS

1. A flat display apparatus for successively receiving as its input gradation data representing brightness of pixels and for displaying an image based on the gradation data on a predetermined display portion, said flat display apparatus comprising:

a serial-parallel converter for sequentially and cyclically sampling the gradation data to convert the sampled gradation data into gradation data of a plurality of systems; and

a plurality of horizontal driving circuits provided in correspondence to the gradation data of the systems for setting gradations for pixels of corresponding columns of said display portion in correspondence to the gradation data of the corresponding systems,

wherein said horizontal driving circuit has a plurality of sampling circuits for successively sampling the gradation data of the corresponding systems to distribute the gradation data of the corresponding systems to the corresponding columns, and a digital to analog converter for setting levels of output signals to the columns based on the sampling results from said sampling circuits,

said serial-parallel converter outputs the

gradation data of the plurality of systems to the corresponding horizontal driving circuits, respectively, at timing corresponding to the sequentially cyclic sampling, and

said horizontal driving circuits of the systems sample the gradation data of the corresponding systems in said plurality of sampling circuits, respectively, at timing corresponding to sequentially cyclic sampling in said serial-parallel converter.

2. The flat display apparatus according to claim 1, wherein said serial-parallel converter, said horizontal driving circuits of the plurality of systems, and a timing generator for outputting timing signals as operational references to said serial-parallel converter and said horizontal driving circuits of the plurality of systems are formed on an insulating substrate of said display portion.

3. The flat display apparatus according to claim 1, wherein the plurality of systems are systems corresponding to odd number columns and even number columns in said display portion, and said horizontal driving circuits of the systems are disposed on upper and lower sides of said display portion, respectively.

4. The flat display apparatus according to claim 1,

wherein said serial-parallel converter has a data converter for enlarging an amplitude of the gradation data and for sampling sequentially and cyclically the resulting data to convert the resulting data into the data of the plurality of systems, and a level shifting circuit for reducing the amplitudes of the individual data of the plurality of systems obtained by said data converter to output the gradation data of the plurality of systems.